

ACTUARIAL STATUS OF THE TRUST FUND

The Board of Trustees has adopted the general financing principle that annual income to the hospital insurance program should be at least equal to annual outlays of the program plus an amount to maintain a balance in the trust fund equal to a minimum of one-half year's expenditures. This principle reflects the view that a small fund is needed for the contingency that future income and outgo may differ substantially from projected levels. In addition, the fund should begin to build a reserve to prepare for the shift in the demographic makeup of the population which occurs before the middle of the next century.

The historical cost of the hospital insurance program, expressed as a percent of taxable payroll, is shown in table 8. The projected expenditures under the program, expressed as percentages of taxable payroll, are summarized for selected years over the next 75-year period in table 9. The ratio of expenditures to taxable payroll has increased from 0.94 percent in 1967 to 2.61 percent in 1985, reflecting both the higher rate of increase in hospital costs than in earnings subject to hospital insurance taxes and the extension of hospital insurance benefits to disabled beneficiaries and persons suffering from end-stage renal disease. Further changes in this ratio to 2.59 percent in 1986, increasing to 7.36 percent by the year 2060 under alternative II-A, and to 2.60 percent in 1986 and 7.89 percent by the year 2060 under alternative II-B, result from the assumption that the cost of the hospital insurance program will continue to increase at a higher rate than taxable earnings. (See appendix A for a description of the methodology and assumptions used in these projections.)

The total cost of the program is the sum of expenditures under the program and an allowance for trust fund building and maintenance. The allowance necessary to build the trust fund to the level of a half year's disbursements and to maintain it at that level, after accounting for the offsetting effect of interest earnings, is also shown in table 9. At the beginning of 1986, the HI fund was below the desired level. However, on January 31, 1986, the outstanding balance of the loan made to the Federal Old-Age and Survivors Insurance Trust Fund in December 1982 was repaid, creating a balance in the HI trust fund estimated to be greater than the 50 percent level. The allowance shown in table 9 for trust fund building and maintenance is, in fact, solely for maintaining the trust fund at the 50 percent level.

The adequacy of the financing of the hospital insurance program under current law is measured by comparing on a year-by-year basis the actual tax rates specified by law with the corresponding total costs of the program, expressed as percentages of taxable payroll. If these two items are exactly equal in each year of the projection period and all projection assumptions are realized, tax revenues along with interest income will be sufficient to provide for benefits and administrative expenses for insured persons and to maintain the trust fund at the level of one-half year's expenditures. In practice, however, tax rate schedules generally are designed with rate changes occurring only at intervals of several years, rather than with continual yearly increases to match exactly with projected cost increases. To the extent that small differences between the yearly costs of the program and the corresponding tax rates occur for short periods of time and are offset by subsequent differences in the reverse direction, the substance of the financing objectives will have been met.

The projected total costs of the program under alternatives II-A and II-B, expressed as percentages of taxable payroll, and the tax rates scheduled under current law are shown in table 9 for selected years over the 75-year period 1986-2060. The total cost of the program, including both expenditures and trust fund building and maintenance, exceeds the tax rate in every year after 1989 and 1988 for alternatives II-A and II-B, respectively. Furthermore, expenditures for benefits and administrative expenses alone exceed the corresponding tax rates in every year after 1989 and 1988 for alternatives II-A and II-B, respectively.

The actuarial balance of the hospital insurance program is defined to be the difference between the average tax rate for the valuation period and the average cost of the program, expressed as a percent of taxable payroll, for the same period. The average tax rate for the 75-year period 1986-2060 is 2.90 percent. The average cost to the program under alternative II-A is 5.55 percent of taxable payroll, composed of 5.52 percent for program expenditures and .03 percent for building and maintenance of the trust fund. The average cost of the program under alternative II-B is 5.92 percent of taxable payroll, composed of 5.88 percent for program expenditures and .04 percent for building and maintenance of the trust fund. The resulting actuarial balances for the 75-year period 1986-2060, as shown in table 10, are a deficit of 2.65 percent and 3.02 percent of taxable payroll for alternatives II-A and II-B, respectively.

Since future economic, demographic, and health care usage and cost experience may differ considerably from either set of intermediate assumptions on which the cost estimates were based, projections also have been prepared on the basis of two additional alternative sets of assumptions. The estimated operations of the

hospital insurance trust fund during calendar years 1985-2010 are summarized in table 11 for all four alternatives, and table 12 compares the actuarial balance for the 75-year period 1986-2060, as well as the first, second, and third 25-year projection periods under each of the four alternatives. The assumptions underlying alternatives II-A and II-B, the intermediate projections, are presented in substantial detail in appendix A. The assumptions used in preparing alternative projections I and III are also summarized in appendix A. The projections shown in the statement of expected operations and status of the trust fund through December 31, 1988, contained earlier in this report, are based on the assumptions contained in alternatives II-A and II-B.

The four alternative sets of assumptions were selected in order to indicate the general range in which the cost of the program reasonably might be expected to fall. The alternative I assumptions are somewhat more optimistic than both alternative II assumptions, resulting in a lower average cost over the projection period and a stronger trust fund development. The alternative III assumptions are somewhat more pessimistic than both alternative II assumptions, resulting in a higher average cost over the projection period and a weaker trust fund development. Alternative III thus reflects the possible impact, in the near future, of conditions which are significantly more adverse than those assumed under either of the intermediate alternatives. Alternatives I and III provide for a fairly wide range of possible experience. Actual experience reasonably may be expected to fall within the range, but no guarantee can be made that this will be the case, particularly in light of the wide variations in experience that have occurred since the beginning of the program. The projected trust fund development under alternative III also provides a measure of the strength of the financing of the

program. An adequate financing schedule ought to be sufficiently strong to withstand, for a period of several consecutive years, conditions in the general economy and in the hospital sector which are substantially more adverse than anticipated under either alternative II-A or alternative II-B.

Under both alternatives II-A and II-B, the trust fund as a percent of a year's disbursements is projected to increase until about 1990 and then decline steadily until it is completely exhausted in the late 1990's. Under alternative I, the trust fund is projected to remain solvent throughout the first 25-year projection period. Under alternative III, the trust fund as a percent of a year's disbursements is projected to increase to a level of about 76 percent in 1988 and then decrease rapidly until the fund is exhausted in 1993. These projections do not reflect any reduction in disbursements due to proposed changes in regulations which were included in the 1987 Federal Budget but which have not been implemented. However, the projections under each alternative, except alternative III, anticipate that the hospital prospective payment rates for fiscal year 1987 will be set two percent higher than the fiscal year 1986 rates, as mentioned earlier in this report. Alternative III assumes that the hospital prospective payment rates for fiscal year 1987 will exceed the fiscal year 1986 rates by one-quarter of one percent plus the increase in the hospital input price index.

The divergence in outcomes among the four alternatives is reflected both in the estimated operations of the trust fund and in the 75-year average costs. The variations in the underlying assumptions, as shown in appendix A, can be characterized as (1) moderate in terms of magnitude of the differences on a year-by-year basis, and (2) persistent over the duration of the projection period. During

the first 25-year projection period, under both sets of intermediate assumptions, program costs are projected to grow at a rate which gradually declines to a level of one percent to 1.5 percent more than taxable payroll by 2010. Under alternative I, program costs are projected to grow at a somewhat lower rate which gradually declines to a level slightly higher than the rate for taxable payroll. Similarly, alternative III follows a pattern whereby program costs initially increase at a somewhat higher rate, gradually declining to a difference of about 3.2 percent by 2010. Recent experience has indicated that economic conditions producing results as adverse as those under alternative III can occur. In view of this and because of the wide range of possible experience, it is important that a balance be maintained in the hospital insurance trust fund as a reserve for contingencies.

A valuation period of 75 years is needed to present fully the future contingencies that reasonably may be expected, such as the impact of the large shift in the demographic composition of the population which occurs after the turn of the century. As table 9 indicates, estimated expenditures under the program, expressed as a percent of taxable payroll, increase rapidly during the second 25 years of the projection period. This rapid increase in costs occurs because the relatively large number of persons born during the period between the end of World War II and the early 1960's will reach retirement age and begin to receive benefits, while the relatively small number of persons born during later years will comprise the labor force. During the last 25 years of the projection period, the projected expenditures under the program stabilize.

Costs beyond the initial 25-year projection period for alternative II-A and II-B are based upon the assumption that costs per unit of service will increase at the same rate as earnings increase. Thus, changes in the outyears primarily reflect the impact of the changing demographic composition of the population. Costs beyond the initial 25-year projection period for alternatives I and III begin by assuming that program cost increases, relative to taxable payroll increases, are approximately 2 percent less rapid and 2 percent more rapid, respectively, than the results under both sets of intermediate assumptions. The 2 percent differential gradually decreases until the year 2035 when program cost increases, relative to taxable payroll, are approximately the same as under both sets of intermediate assumptions.

The 75-year actuarial balance of the hospital insurance program under alternative II-B, as seen in table 10, is -3.02 percent of taxable payroll. The corresponding actuarial balance as reported in the 1985 annual report was -2.79 percent of taxable payroll. The major reasons for the change in the 75-year actuarial balance are:

- (1) Change in valuation period: Deletion of 1985 and the addition of 2060 to the 75-year projection period substitutes a relatively bad year for a good year with respect to the operations of the hospital insurance trust fund. The net effect on the actuarial balance is -0.07 percent.
- (2) Updating the projection base: The cost as a percent of payroll for 1985 was less than estimated in the 1985 annual report. The net effect of this change is +0.14 percent on the actuarial balance.

- (3) Lower increase in the prospective payment rates: It is anticipated that the Secretary of Health and Human Services will exercise his discretionary authority to limit the prospective payment rates in fiscal year 1987 to a two percent increase over the level set in fiscal year 1986. The 1985 annual report anticipated that the increase in the prospective payment rates for fiscal year 1987, over the level set for fiscal year 1986, would be one-quarter of one percent plus the increase in the hospital input price index. The net effect of this change is +0.06 percent.
- (4) Economic and demographic assumptions: Changes in the economic and demographic assumptions described in Appendix A result in a -0.22 percent change on the actuarial balance.
- (5) Hospital assumptions: Changes in the hospital assumptions described in Appendix A result in a -0.14 percent change on the actuarial balance.

TABLE 8.—COST OF THE HOSPITAL INSURANCE PROGRAM,
EXPRESSED AS A PERCENT OF TAXABLE PAYROLL

<u>Calendar</u> <u>Year</u>	<u>Expenditures</u> <u>Under the Program</u> ^{1/}
1967	0.94%
1968	1.04
1969	1.12
1970	1.20
1971	1.32
1972	1.30
1973	1.33
1974	1.42
1975	1.69
1976	1.83
1977	1.95
1978	2.00
1979	1.99
1980	2.19
1981	2.39
1982	2.65
1983	2.66 ^{2/}
1984	2.61
1985	2.61

^{1/} Costs attributable to insured beneficiaries only. Benefits and administrative costs for noninsured persons are financed through general revenue transfers and premium payments, rather than through payroll taxes. Gratuitous credits for military service after 1956 are included in taxable payroll.

^{2/} Deemed credits for military service before 1984 were attributed to the year in which such service had occurred. If all such credits had been attributed in 1983, expenditures under the program in 1983 would have been lower by .19 percent of taxable payroll.

NOTE: Taxable payroll is adjusted to take into account the lower contribution rates on self-employment income before 1984, on tips, and on multiple-employer "excess wages," as compared with the combined employer-employee rate.

TABLE 9.—COST AND TAX RATES OF THE HOSPITAL INSURANCE PROGRAM
EXPRESSED AS A PERCENT OF TAXABLE PAYROLL

Calendar Year	Expenditures under the program 1/	Trust fund building and maintenance 2/	Total cost of the program 3/	Tax rate scheduled in the law 4/	Difference
Alternative II-A					
1986	2.59%	0.02%	2.61%	2.90%	0.29%
1987	2.66	0.04	2.70	2.90	0.20
1988	2.77	0.03	2.80	2.90	0.10
1989	2.86	0.03	2.89	2.90	0.01
1990	2.96	0.04	3.00	2.90	-0.10
1995	3.45	0.04	3.48	2.90	-0.58
2000	3.73	0.03	3.76	2.90	-0.86
2005	3.98	0.02	4.00	2.90	-1.10
2010	4.26	0.02	4.28	2.90	-1.38
2015	4.71	0.02	4.73	2.90	-1.83
2020	5.33	0.02	5.35	2.90	-2.45
2025	6.04	0.03	6.07	2.90	-3.17
2030	6.67	0.03	6.70	2.90	-3.80
2035	7.06	0.03	7.09	2.90	-4.19
2040	7.25	0.02	7.27	2.90	-4.37
2045	7.31	0.03	7.34	2.90	-4.44
2050	7.33	0.03	7.36	2.90	-4.46
2055	7.34	0.03	7.37	2.90	-4.47
2060	7.36	0.03	7.39	2.90	-4.49
Averages:					
1986-2010	3.53	0.03	3.56	2.90	-0.66
2011-2035	5.74	0.02	5.76	2.90	-2.86
2036-2060	7.30	0.03	7.33	2.90	-4.43
1986-2060	5.52	0.03	5.55	2.90	-2.65
Alternative II-B					
1986	2.60	0.02	2.62	2.90	0.28
1987	2.69	0.04	2.73	2.90	0.17
1988	2.82	0.04	2.86	2.90	0.04
1989	2.92	0.04	2.95	2.90	-0.05
1990	3.03	0.03	3.07	2.90	-0.17
1995	3.54	0.04	3.58	2.90	-0.68
2000	3.90	0.03	3.93	2.90	-1.03
2005	4.21	0.03	4.24	2.90	-1.34
2010	4.56	0.02	4.58	2.90	-1.68
2015	5.05	0.02	5.07	2.90	-2.17
2020	5.71	0.03	5.74	2.90	-2.84
2025	6.48	0.03	6.51	2.90	-3.61
2030	7.15	0.04	7.19	2.90	-4.29
2035	7.57	0.03	7.60	2.90	-4.70
2040	7.77	0.03	7.80	2.90	-4.90
2045	7.83	0.04	7.87	2.90	-4.97
2050	7.85	0.04	7.89	2.90	-4.99
2055	7.86	0.04	7.90	2.90	-5.00
2060	7.89	0.04	7.93	2.90	-5.03
Averages:					
1986-2010	3.68	0.04	3.72	2.90	-0.82
2011-2035	6.15	0.03	6.18	2.90	-3.28
2036-2060	7.82	0.04	7.86	2.90	-4.96
1986-2060	5.88	0.04	5.92	2.90	-3.02

1/ Costs attributable to insured beneficiaries only. Benefits and administrative costs for noninsured persons are financed through general revenue transfers and premium payments, rather than through payroll taxes. Gratuitous credits for military service after 1956 are included in taxable payroll.

2/ Allowance for building and maintaining the trust fund balance at the level of a half-year's outgo after accounting for the offsetting effect of interest earnings.

3/ Totals do not necessarily equal the sum of rounded components.

4/ Rates for employees and employers combined.

NOTE: Taxable payroll is adjusted to take into account the lower contribution rates on tips and on multiple-employer "excess wages," as compared with the combined employer-employee rate.

TABLE 10.--ACTUARIAL BALANCE OF THE HOSPITAL
INSURANCE PROGRAM, EXPRESSED AS A PERCENT OF TAXABLE PAYROLL

	Alternative II-A	Alternative II-B
Average contribution rate, scheduled under present law <u>1</u> /.....	2.90%	2.90%
Average cost of the program <u>1</u> /		
Expenditures, for benefit payments and administrative costs for insured beneficiaries.....	5.52	5.88
Building and maintaining the trust fund, at the level of one-half year's expenditures.....	0.03	0.04
Total cost of the program <u>2</u> /.....	5.55	5.92
Actuarial balance.....	-2.65	-3.02

1/ Average for the 75-year period 1986-2060.

2/ Totals do not necessarily equal sum of rounded components.

NOTE: Taxable payroll is adjusted to take into account the lower contribution rates on tips and on multiple-employer "excess wages," as compared with the combined employer-employee rate.

TABLE 11.—ESTIMATED OPERATIONS OF THE HOSPITAL INSURANCE TRUST FUND
DURING CALENDAR YEARS 1985-2010, UNDER ALTERNATIVE SETS OF ASSUMPTIONS
(Dollar amounts in billions)

Calendar Year	Total Income	Total disbursements	Interfund borrowing transfers 1/	Net increase in fund	Fund at end of year	Ratio of assets to disbursements 2/ (percent)
ALTERNATIVE I						
1985 3/	\$ 51.4	\$ 48.4	\$ 1.8	\$ 4.8	\$ 20.5	32
1986	59.9	50.1	10.6	20.4	40.9	41
1987	63.4	54.4		9.0	49.9	75
1988	68.3	59.7		8.6	58.5	84
1989	73.2	64.9		8.3	66.9	90
1990	77.6	70.0		7.6	74.5	96
1991	82.5	75.6		6.9	81.4	99
1992	86.2	80.5		5.7	87.1	101
1993	90.7	85.9		4.8	91.9	101
1994	94.8	91.2		3.6	95.6	101
1995	99.7	97.2		2.5	98.1	98
2000	129.1	128.9		0.3	104.2	81
2005	165.9	165.9		0.1	103.7	62
2010	210.6	210.2		0.5	105.1	50
ALTERNATIVE II-A						
1985 3/	51.4	48.4	1.8	4.8	20.5	32
1986	59.8	50.1	10.6	20.3	40.8	41
1987	63.6	54.5		9.1	49.9	75
1988	68.2	60.4		7.8	57.7	83
1989	72.9	66.4		6.5	64.3	87
1990	77.7	72.9		4.8	69.1	88
1991	82.0	79.9		2.1	71.2	87
1992	86.3	87.2		-1.0	70.2	82
1993	90.3	95.0		-4.8	65.5	74
1994	94.7	103.3		-8.6	56.9	63
1995	99.0	112.1		-13.1	43.8	51
1996	103.7	120.9		-17.1	26.7	36
1997	108.4	129.9		-21.5	5.2	21
1998	113.2	139.7		-26.6	4/	4
ALTERNATIVE II-B						
1985 3/	51.4	48.4	1.8	4.8	20.5	32
1986	59.6	50.1	10.6	20.1	40.6	41
1987	62.9	54.5		8.5	49.1	75
1988	67.1	60.5		6.7	55.7	81
1989	72.3	67.3		5.0	60.8	83
1990	77.6	74.8		2.8	63.6	81
1991	82.4	82.7		-0.3	63.3	77
1992	87.3	91.0		-3.7	59.5	70
1993	91.9	99.9		-8.0	51.5	60
1994	96.8	109.4		-12.6	38.9	67
1995	101.5	119.6		-18.1	20.8	33
1996	106.6	129.9		-23.2	5/	16
ALTERNATIVE III						
1985 3/	51.4	48.4	1.8	4.8	20.5	32
1986	59.5	50.3	10.6	19.9	40.4	41
1987	62.7	56.0		6.8	47.1	72
1988	65.3	62.3		2.9	50.0	76
1989	70.6	70.5		0.1	50.1	71
1990	73.7	78.6		-5.0	45.1	64
1991	77.7	88.6		-10.9	34.2	51
1992	81.9	99.6		-17.7	16.5	34
1993	85.6	111.9		-26.4	6/	15

1/ A loan of \$12.4 billion to the OASI trust fund was made in 1982. This loan was still an asset of the HI trust fund however, since these assets were not immediately available for payment of HI benefits, they were subtracted from the HI fund balance. The positive amounts shown represent repayments of principal to the HI trust fund.

2/ Ratio of assets in the trust fund at the beginning of the year to disbursements during the year.

3/ Figures for 1985 represent actual experience.

4/ Trust fund depleted in calendar year 1998.

5/ Trust fund depleted in calendar year 1996.

6/ Trust fund depleted in calendar year 1993.

NOTE: Totals do not necessarily equal the sum of rounded components.

TABLE 12.--SEVENTY-FIVE YEAR ACTUARIAL BALANCE OF THE
HOSPITAL INSURANCE PROGRAM UNDER ALTERNATIVE
SETS OF ASSUMPTIONS

	Alternative			
	<u>I</u>	<u>II-A</u>	<u>II-B</u>	<u>III</u>
1986-2010:				
Average contribution rate <u>1/</u>	2.90%	2.90%	2.90%	2.90%
Average cost of the program <u>2/</u>	2.96	3.56	3.72	4.87
Actuarial balance	-0.06	-0.66	-0.82	-1.97
2011-2035:				
Average contribution rate <u>1/</u>	2.90	2.90	2.90	2.90
Average cost of the program <u>2/</u>	3.34	5.76	6.18	11.85
Actuarial balance	-0.44	-2.86	-3.28	-8.95
2036-2060:				
Average contribution rate <u>1/</u>	2.90	2.90	2.90	2.90
Average cost of the program <u>2/</u>	3.96	7.33	7.86	16.06
Actuarial balance	-1.06	-4.43	-4.96	-13.16
1986-2060:				
Average contribution rate <u>1/</u>	2.90	2.90	2.90	2.90
Average cost of the program <u>2/</u>	3.42	5.55	5.92	10.93
Actuarial balance	-0.52	-2.65	-3.02	-8.03

1/ As scheduled under present law.

2/ Expressed as a percent of taxable payroll. Includes amounts for trust fund building and maintenance.

NOTE: Taxable payroll is adjusted to take into account the lower contribution rates on tips and on multiple-employer "excess wages," as compared with the combined employer-employee rate.

CONCLUSION

The balance in the Federal Hospital Insurance Trust Fund at the beginning of 1986 was at the level of 41 percent of estimated outgo for calendar year 1986. This is below the 50 percent level recommended by the Board of Trustees. However, on January 31, 1986, the outstanding balance of the loan made to the Federal Old-Age and Survivors Insurance Trust Fund in December 1982 was repaid, creating a balance in the HI trust fund estimated to be greater than the 50 percent level.

The tax rates specified in the law are sufficient, along with interest earnings and assets in the fund to support program expenditures and maintain the trust fund at a level of at least 50 percent of one year's outgo only over the next seven to nine years under the intermediate assumptions. Even though the trust fund is expected to be able to pay benefits and administrative expenses as they become due until the late 1990's, any significant adverse deviation from these projections could result in the inability of the fund to meet its obligations much sooner than projected. In order to bring the hospital insurance program into close actuarial balance even for the first 25-year projection period under alternative II-B assumptions, either outlays will have to be reduced by 22 percent or income increased by 28 percent.

Over the 75-year projection period, the average tax rate necessary to provide for benefits and administrative expenses plus maintain the fund at a level of a half-year's disbursements exceeds the average tax rate scheduled in the law, producing an average deficit of 3.02 percent of taxable payroll under alternative II-B and

2.65 percent under alternative II-A. For the first 25-year projection period, the average deficit is 0.66 and 0.82 percent of taxable payroll for alternative II-A and alternative II-B, respectively. The average deficit grows to 2.86 and 3.28 percent of taxable payroll for alternatives II-A and II-B respectively, during the second 25-year projection period, and to 4.43 and 4.96 percent of taxable payroll for alternatives II-A and II-B respectively, during the third 25-year projection period.

There are currently over four covered workers supporting each HI enrollee. This ratio will begin to decline rapidly early in the next century. By the middle of that century, there will be only slightly more than two covered workers supporting each enrollee. Not only are the anticipated reserves and financing of the HI program inadequate to offset this demographic change, but under all but the most optimistic assumptions, the HI Trust Fund is projected to become exhausted even before the major demographic shift begins to occur. Exhaustion is projected to occur during the late 1990's under the intermediate assumptions, and could occur as early as 1993 if the pessimistic assumptions are realized.

The Board notes that promising steps to begin reducing the rate of growth in payments to hospitals have already been taken. Initial experience under the prospective payment system for hospitals suggests that this payment mechanism is an effective means of constraining the growth in hospital payments and improving the efficiency of the hospital industry. Efforts focused on improving the efficiency and reducing the costs of the health care delivery system need to be continued, in close combination with mechanisms that will assure that the quality of health care is not adversely affected.

Because of the magnitude of the projected actuarial deficit in the HI program and the probability that the HI Trust Fund will be exhausted before the end of the century, the Board believes that early corrective action is essential in order to avoid the need for later, potentially precipitous changes. The Board, therefore, urges that the Congress take early remedial measures to bring future HI program costs and financing into balance.

APPENDIX A

ACTUARIAL METHODOLOGY AND PRINCIPAL ASSUMPTIONS FOR
THE HOSPITAL INSURANCE COST ESTIMATES

The basic methodology and assumptions for alternative II-A and alternative II-B used in the estimates for the hospital insurance program are described in this appendix. These alternatives reflect two different levels of expectation of future performance of the economy. In addition, sensitivity testing of program costs under alternative sets of assumptions is presented.

1. PROGRAM COSTS

The principal steps involved in projecting the future costs of the hospital insurance program are (1) establishing the present cost of services provided to beneficiaries, by type of service, to serve as a projection base; (2) projecting increases in payment amounts for inpatient hospital services under the program; (3) projecting increases in the cost of skilled nursing facility and home health agency services covered under the program; and (4) projecting increases in administrative costs. The major emphasis will be directed toward expenditures for inpatient hospital services, which account for approximately 95 percent of total benefits.

a. Projection Base

In order to establish a suitable base from which to project the future costs of the program, the incurred payments for services provided must be reconstructed for the most recent period for which a reliable determination can be made. To do this, payments to providers must be attributed to dates of service, rather than to payment dates. In addition, the nonrecurring effects of any changes in regulations or administration of the program and of any items affecting only the timing and flow of payments to providers must be eliminated. As a result, the rates of increase in the incurred cost of the program differ from the increases in cash disbursement shown in tables 5 and 6.

For those expenses still reimbursed on a reasonable cost basis, the costs for covered services are determined on the basis of provider cost reports. Payments to a provider initially are made on an "interim" basis; to adjust interim payments to the level of retroactively determined costs, a series of payments or recoveries is effected through the course of cost settlement with the provider. The net amounts paid to date to providers in the form of cost estimates are known; however, the incomplete data available do not permit a precise determination of the exact amounts incurred during a specific period of time. Due to the time required to obtain cost reports from providers, to verify these reports, and to perform audits (where appropriate), final settlements have lagged behind the liability for such payments of recoveries by as much as several years for some providers. Hence, the final cost of services reimbursed on a reasonable cost basis has not been completely determined for the most recent years of the program, and some degree of uncertainty remains even for earlier years.

Even for inpatient hospital services paid for on the basis of diagnostic related groups (DRG's), most payments are initially made on a periodic interim basis, and final payments are determined on the basis of bills containing detailed diagnostic information which are later submitted by the hospital.

Additional problems are posed by changes in administrative or reimbursement policy which have a substantial effect on either the amount or incidence of payment. The extent and timing of the incorporation of such changes into interim payment rates and cost settlement amounts cannot be determined precisely.

The process of allocating the various types of payments made under the program to the proper incurred period—using incomplete data and estimates of the impact of administrative actions—presents difficult problems, the solution to which can be only approximate. Under the circumstances, the best that can be expected is that the actual incurred cost of the program for a recent period can be estimated within a few percent. This increases the projection error directly, by incorporating any error in estimating the base year into all future years.

b. Payments for Inpatient Hospital Costs

Beginning with hospital accounting years starting on or after October 1, 1983, the hospital insurance program began paying participating hospitals a prospectively determined amount for providing covered services to beneficiaries. With the exception of certain expenses (such as capital-related and medical education expenses) still reimbursed on the basis of reasonable costs, the payment rate for each admission depends upon the DRG to which the admission belongs.

The law contemplates that the annual increase in the payment rate for each admission will be related to a hospital input price index, which measures the increase in prices for goods and services purchased by hospitals for use in providing care to hospital inpatients. For hospital accounting years beginning before October 1, 1986, the prospective payment rates have already been determined. For fiscal year 1987 and later, the increase in the payment rate for each hospital admission is determined by the Secretary of Health and Human Services, with the advice of the Prospective Payment Assessment Commission, a special commission appointed to study and make recommendations with regard to the level of payments to hospitals. The law specifies that the only increase in the payment rates that can be provided without specific justification is one-quarter of one percent plus the increase in the hospital input price index. Therefore, it is anticipated that in most years the Secretary will recommend an increase in payment per admission equal to one-quarter of one percent plus the increase in the hospital input price index, although the law provides that the Secretary may select an alternative increase. The projections contained in this report are based on the assumption that for fiscal year 1987, the Secretary will determine that the prospective payment rates are to be increased two percent from the levels determined for 1986, and in fiscal year 1988 and later, program payments to participating hospitals for each covered admission will be increased by one-quarter of one percent plus the increase in the hospital input price index.

Increases in aggregate payments for inpatient hospital care covered under the hospital insurance program can be analyzed into four broad categories:

(1) Labor factors - the increase in the hospital input price index which is attributable to increases in hospital workers' hourly earnings;

(2) Non-labor factors - the increase in the hospital input price index which is attributable to factors other than hospital workers' hourly earnings, such as the costs of energy, food, and supplies;

(3) Unit input intensity allowance - the increase in inpatient hospital costs per admission which are in excess of those attributable to increases in the hospital input price index; and

(4) Volume of services - the increase in total output of units of service (as measured by hospital admissions covered by the hospital insurance program).

It has been possible to isolate some of these elements and to identify their roles in previous hospital cost increases. Table A1 shows the values of the principal components of the increases for historical periods for which data are available and the projected trends used in the estimates. The following discussions apply to projections under both alternative II-A and alternative II-B, unless otherwise indicated.

Increases in hospital workers' hourly earnings can be analyzed and projected in terms of the assumed increases in hourly earnings in employment in the general economy and the difference between hourly earnings increases in the general economy and in the hospital industry.

Since the beginning of the hospital insurance program, the differential between hospital workers hourly earnings and hourly earnings in the general economy has fluctuated widely, but has averaged about 1.8 percent. Since 1972, this differential has averaged 1.3 percent. Several factors contributing to this differential can be identified, including (1) growth in third-party reimbursement of hospitals--through Medicare, Medicaid, and comprehensive private plans--which is likely to have weakened hospital resistance to wage demands; (2) increased proportions of highly trained and more highly paid personnel; (3) an increased degree of labor organization and activity; and (4) the fact that hospital employees have historically earned less than similarly skilled workers in other industries. Over the short term, this differential is assumed to reach a level of one percent, declining to zero near the end of the first twenty-five year projection period.

Increases in hospital price input intensity, which are primarily the result of price increases for goods and services that hospitals purchase which do not parallel increases in the Consumer Price Index (CPI), are measured as the difference between the non-labor component of the hospital input price index and the CPI. For the ten years preceding the beginning of the hospital insurance program, hospital price input intensity averaged slightly more than one percent annually. Although the level has fluctuated erratically since the hospital insurance program began, the long term average has remained at about the same general level as before the program began, averaging about 1.4 percent during 1972-1984. Over the short term, hospital price input intensity is assumed to reach a level of one percent, and decline gradually to zero by the end of the first 25-year projection period.

It is contemplated that future increases in payments to participating hospitals for covered admissions in most years will be equal to one-quarter of one percent plus the increase in the hospital input price index. Thus, the unit input intensity allowance, as indicated in table A1, is assumed to equal one-quarter of one percent in all years during the first 25-year projection period. After the first 25-year projection period, the input price index plus the unit input intensity allowance is assumed to increase at the same rate as average earnings increase. However, it should be noted that the level of the unit input intensity allowance is completely within the discretion of the Secretary of Health and Human Services and could vary significantly from the assumed value from year to year. For historical years, the unit input intensity allowance has been set at one percent for illustrative purposes, with historical increases in excess of one percent allocated to other sources.

During 1985 and 1986, increases in inpatient hospital payments from other sources are primarily due to three factors: (1) the requirement that prospective payment rates be set at a level which neither decreases nor increases aggregate payments to hospitals in 1985; (2) the improvement in DRG coding as hospitals continue to adjust to the prospective payment system; and (3) the decision by the Secretary of Health and Human Services to set the 1986 payment rates at the same level as for 1985. In addition, for the years 1986 and 1987, the increases in inpatient hospital payments from other sources reflects the assumption that the Secretary will set the fiscal year 1987 prospective payment rates at a level two percent higher than the fiscal year 1986 rates. For the years 1988 through 1995, a small one-half percent increase from other sources is attributable to a continuation of the current trend toward treating less complicated (and thus, less expensive) cases in outpatient settings, resulting in an increase in the average prospective payment per admission for inpatient hospital services. The long-term average

increase from other sources is due to payments for certain costs not included in the DRG payment increasing at a rate faster than the input price index plus one-quarter of one percent. Possible other sources of both relative increases and decreases in payments include (1) a shift to more or less expensive admissions (diagnosis related groups) due to changes in the demographic characteristics of the covered population; (2) changes in medical practice patterns; and (3) adjustments in the relative payment levels for various diagnosis related groups or addition/deletion of diagnosis related groups in response to changes in technology. As experience under the prospective payment system develops and is analyzed, it may be possible to establish a predictable trend for this component.

Other factors which contribute to increases in payments for inpatient hospital services include increases in units of service as measured by increases in inpatient hospital admissions covered under the hospital insurance program. Increases in admissions are attributable both to increases in enrollment under the hospital insurance program and to increases in admission incidence (admissions per beneficiary). The historical and projected increases in enrollment reflect the more rapid increase in the population aged 65 and over than in the total population of the United States, and beginning in mid-1973, the coverage of certain disabled beneficiaries and persons with end-stage renal disease. Increases in the enrollment are expected to continue, reflecting a continuation of the demographic shift into categories of the population which are eligible for hospital insurance protection. In addition, increases in the average age of beneficiaries lead to higher levels of admission incidence.

c. Skilled Nursing Facility and Home Health Agency Costs

Historical experience with the number of days of care covered in skilled nursing facilities under the hospital insurance program has been characterized by wide swings. The number of covered days dropped very sharply in 1970 and continued to decline through 1972. This was the result of strict enforcement of regulations separating skilled nursing care from custodial care. Because of the small fraction of nursing home care covered under the program, this reduction primarily reflected the determination that Medicare was not liable for payment rather than reduced usage of services. The 1972 amendments extended benefits to persons who require skilled rehabilitative services regardless of their need for skilled nursing services (the former prerequisite for benefits). This change and subsequent related changes in regulations have resulted in significant increases in the number of services covered by the program. Recent data have indicated a decline in utilization of these services through 1981, and a slight increase in 1982. Only modest increases are projected in skilled nursing utilization, thereafter.

Increases in the average cost per day in skilled nursing facilities under the program are caused principally by increasing payroll costs for nurses and other skilled labor required. Projected rates of increase are assumed to be about the same as increases in general earnings throughout the projection period. The resulting increases in the cost of skilled nursing facility services are shown in table A2.

Program experience with home health agency costs has shown a generally upward trend. The number of visits has fluctuated somewhat from year to year, with very sharp increases appearing in the last seven years. Relatively large increases are assumed for the next few years, followed by a projected pattern of increases similar to that for skilled nursing facilities. Cost per service is assumed to increase at about the same rate as increases in general earnings. The resulting home health agency cost increases are shown in table A2.

d. Administrative Expenses

The costs of administering the hospital insurance program have remained relatively small, in comparison with benefit amounts, throughout the history of the program. The ratio of administrative expenses to benefit payments has generally fallen within the range of 1 to 3 percent. The short-range projection of administrative cost is based on estimates of workloads and approved budgets for intermediaries and the Health Care Financing Administration. In the long range, administrative cost increases are based on assumed increases in workloads, primarily due to growth and aging of the population, and on assumed unit cost increases of slightly less than the increases in average hourly earnings shown in table A1.

2. FINANCING

In order to analyze costs and to evaluate the financing of a program supported by payroll taxes, program costs must be compared on a year-by-year basis with the taxable payroll which provides the source of income for these costs.

Since the vast majority of total program costs are related to insured beneficiaries and since general revenue appropriations and premium payments are available to support the uninsured segments, the remainder of this report will focus on the financing for insured beneficiaries.

a. Taxable Payroll

Taxable payroll increases can be separated into a part due to increases in covered earnings and a part due to increases in the number of covered workers. The taxable payroll projection used in this report is based on assumptions consistent with those used in the OASDI program. Increases in taxable payroll assumed for this report are shown in table A2.

b. Relationship Between Program Costs and Taxable Payroll

The single most meaningful measure of program cost increases, with reference to the financing of the system, is the relationship between program cost increases and taxable payroll increases. If the rates of increase in both series are the same, a level tax rate over time will be adequate to support the program. However, to the extent that program costs increase more rapidly than taxable payroll, either a schedule of increasing tax rates or a reduction in program costs will be required to finance the system over time. Table A2 shows the resulting increases in program costs relative to taxable payroll over the first 25-year projection period. These relative increases reduce gradually to a level of approximately 1.1 percent and 1.3 percent per year by 2010 for alternatives II-A and II-B, respectively. The result of these increases is a continued increase in the year-by-year ratios of program expenditures to taxable payroll, as shown in table A3.

3. SENSITIVITY TESTING OF COSTS UNDER ALTERNATIVE ASSUMPTIONS

Over the past 20 years, aggregate inpatient hospital costs for Medicare beneficiaries have increased substantially faster than increases in average earnings and prices in the general economy. Table A1 shows the experience of the HI program for 1972 to 1984. As mentioned earlier, the HI program has begun making payments to hospitals on a prospective basis. The prospective payment system has made the outlays of the HI program potentially less vulnerable to excessive rates of growth in the hospital industry. Thus, the trends in aggregate HI inpatient hospital costs shown in the historical section of table A1 have little relation to the projected HI inpatient hospital payments. However, there is some uncertainty in projecting HI expenditures due to the uncertainty of the underlying economic assumptions and utilization increases. In addition, there is some uncertainty in projecting HI inpatient hospital payments due to the Secretary of Health and Human Services' discretion in setting the payment levels to hospitals.

In view of the uncertainty of future cost trends, projected costs for the hospital insurance program have been prepared under four alternative sets of assumptions. A summary of the assumptions and results is shown in table A3. The sets of assumptions labeled "Alternative II-A" and "Alternative II-B" form the basis for the detailed discussion of hospital cost trends and resulting program costs presented throughout this report. They represent intermediate sets of cost increase assumptions, compared with the lower cost and more optimistic alternative I and the higher cost and less optimistic alternative III. Increases in the economic factors (average hourly earnings and CPI) for the four alternatives are consistent with those underlying the OASDI report.

As noted earlier, the single most meaningful measure of hospital insurance program cost increases, with reference to the financing of the system, is the relationship between program cost increases and taxable payroll increases. The extent to which program cost increases exceed increases in taxable payroll will determine how steeply tax rates must be increased or program costs curtailed to finance the system over time.

By the end of the first 25-year projection period, program costs are projected to increase about 1.1 percent and 1.3 percent faster than increases in taxable payroll for alternative II-A and II-B, respectively. Program costs beyond the first 25-year projection period are based on the assumption that costs per unit of service will increase at the same rate as earnings increase. Program expenditures, which are currently about 2.6 percent of taxable payroll, increase to a level of between 4 and 5 percent by the year 2010 under both alternatives II-A and II-B and to over 7 percent by the year 2060. Hence, if all of the projection assumptions are realized over time, hospital insurance tax rates provided in the present financing schedule (2.9 percent of taxable payroll) will be inadequate to support the cost of the program.

During the first 25-year projection period, alternatives I and III contain assumptions which result in program costs increasing, relative to taxable payroll increases, approximately 2 percent less rapidly and 2 percent more rapidly, respectively, than the results under both sets of intermediate assumptions. Costs beyond the first 25-year projection period assume the 2 percent differential gradually decreases until the year 2035 when program cost increases relative to taxable payroll are approximately the same as under both sets of intermediate

assumptions. Under alternative I, program costs increase slightly more than increases in taxable payroll during the first 25-year projection period. Program expenditures under this alternative would be about 3.0 percent of taxable payroll in the year 2010 and increase to about 4.0 percent of taxable payroll by 2060. Hence, hospital insurance tax rates provided in the present financing schedule will be inadequate, even under the optimistic alternative I assumptions. Under alternative III, program costs ultimately increase about 3.5 percent more rapidly than increases in taxable payroll during the first 25-year projection period. The result of this differential is a level of program expenditures in the year 2010 which is about 7.2 percent of taxable payroll, increasing to about 16.0 percent of taxable payroll in the year 2060.

TABLE A1.--COMPONENTS OF HISTORICAL AND PROJECTED INCREASES IN HI INPATIENT HOSPITAL PAYMENTS 1/
(Percent)

Calendar Year	Labor			Non-Labor			Input Price Index	Unit Input Intensity Allowance	Units of Service		Other Sources	HI Inpatient Hospital Costs
	Average hourly Earnings	Hospital Hourly Earnings Level	Hospital Hourly Earnings	CPI	Hospital	Non-Labor			HI Enrollment	Admission Incidence		
					Price Input Intensity	Hospital Prices						
Historical Data:												
1972	6.0%	0.8%	6.8%	3.3%	1.2%	4.5%	5.9%	1.0%	1.4%	-1.2%	3.1%	10.4%
1973	8.6	-2.9	5.5	6.2	1.7	8.0	6.5	1.0	6.5	7.1	-7.0	14.0
1974	6.4	1.2	7.7	11.0	2.9	14.2	10.4	1.0	6.2	-0.3	4.8	23.6
1975	7.3	2.4	9.9	9.1	2.8	12.2	10.9	1.0	3.4	0.1	5.9	22.6
1976	6.3	1.8	8.2	5.7	2.5	8.3	8.2	1.0	2.9	1.5	4.5	19.2
1977	6.9	0.2	7.1	6.5	1.3	7.9	7.4	1.0	3.0	4.6	0.3	17.1
1978	8.7	-0.3	8.4	7.6	0.3	7.9	8.2	1.0	2.7	-1.9	4.4	14.9
1979	9.4	-0.9	8.4	11.4	-0.3	11.1	9.6	1.0	2.7	3.1	-0.5	16.5
1980	8.0	2.4	10.6	13.5	-0.6	12.8	11.6	1.0	2.1	2.4	2.6	20.8
1981	8.9	3.1	12.3	10.3	0.6	11.0	11.7	1.0	1.9	2.8	1.6	19.9
1982	5.9	5.0	11.2	6.0	1.3	7.4	9.6	1.0	1.7	0.0	2.9	15.7
1983	4.0	3.2	7.3	3.0	1.7	4.8	6.3	1.0	1.7	1.0	0.5	10.8
1984	4.8	0.7	5.5	3.4	2.3	5.8	5.6	1.0	1.4	-3.7	5.7	10.0
Projection:												
Alternative II-A												
1985	5.0	0.1	5.1	3.5	0.8	4.3	4.8	0.81 2/	2.3	-6.2	3.2	4.6
1986	4.7	-0.9	3.8	2.9	1.3	4.2	4.0	0.25	2.2	-3.1	2.5	5.8
1987	5.1	0.0	5.1	3.9	0.3	4.2	4.7	0.25	2.0	-0.5	2.8	9.5
1988	5.1	1.0	6.2	3.7	1.0	4.7	5.6	0.25	1.9	1.1	1.7	10.9
1989	5.1	1.0	6.2	3.3	1.0	4.3	5.4	0.25	1.9	1.8	0.5	10.1
1990	4.9	1.0	5.9	3.0	1.0	4.0	5.2	0.25	1.9	1.8	0.5	9.9
1995	4.9	1.0	5.9	3.0	1.0	4.0	5.2	0.25	1.3	1.3	0.4	8.6
2000	5.0	1.0	6.0	3.0	1.0	4.0	5.3	0.25	0.9	1.0	-0.1	7.5
2005	5.0	0.5	5.5	3.0	0.5	3.5	4.9	0.25	1.3	0.5	-0.1	6.9
2010	5.2	0.0	5.2	3.0	0.0	3.0	4.5	0.25	1.9	-0.2	0.0	6.5
Alternative II-B												
1985	4.8	0.3	5.1	3.5	0.8	4.3	4.8	0.81 2/	2.3	-6.2	3.2	4.6
1986	4.5	-0.7	3.8	3.2	1.0	4.2	4.0	0.25	2.2	-3.1	2.5	5.8
1987	5.2	-0.2	5.0	4.4	0.1	4.5	4.8	0.25	2.0	-0.5	2.8	9.6
1988	5.3	1.0	6.4	4.4	1.0	5.4	6.0	0.25	1.9	1.1	1.7	11.3
1989	6.4	1.0	7.5	4.9	1.0	6.0	6.8	0.25	1.9	1.8	0.2	11.3
1990	6.1	1.0	7.2	4.6	1.0	5.6	6.5	0.25	1.9	1.8	0.4	11.2
1995	5.5	1.0	6.6	4.0	1.0	5.0	6.0	0.25	1.3	1.3	0.2	9.3
2000	5.7	1.0	6.8	4.0	1.0	5.0	6.1	0.25	0.9	1.0	-0.1	8.3
2005	5.7	0.5	6.2	4.0	0.5	4.5	5.6	0.25	1.3	0.5	-0.1	7.7
2010	5.8	0.0	5.8	4.0	0.0	4.0	5.2	0.25	1.9	-0.2	0.0	7.2

1/ Percent increase in year indicated over previous year.

2/ Reflects the effect of a one percent increase for fiscal year 1985 over 1984 and a one quarter of one percent increase for fiscal year 1986 over 1985.

TABLE A2.--RELATIONSHIP BETWEEN INCREASES IN TOTAL HI PROGRAM COSTS AND INCREASES IN TAXABLE PAYROLL 1/
(Percent)

Calendar year	Inpatient hospital 2/	Skilled nursing facility 3/	Home health agency 3/	Weighted average 4/	HI administrative costs 3/	Total HI program costs 3/	HI taxable payroll	Ratio of costs to payroll 5/
Alternative II-A								
1986	6.0%	3.1%	13.7%	6.4%	-5.8%	6.1%	7.0%	-0.8%
1987	9.7	5.5	12.8	9.8	9.4	9.8	7.0	2.6
1988	11.1	8.0	10.8	11.1	6.7	11.0	6.7	4.0
1989	10.2	7.5	10.8	10.2	8.6	10.2	6.7	3.3
1990	10.0	7.0	9.5	9.9	8.2	9.9	6.1	3.6
1995	8.6	7.0	7.4	8.5	6.6	8.5	5.6	2.7
2000	7.5	6.5	7.0	7.4	6.1	7.4	5.9	1.5
2005	6.9	6.1	6.7	6.9	6.0	6.9	5.6	1.2
2010	6.5	6.0	6.5	6.5	5.8	6.5	5.3	1.1
Alternative II-B								
1986	6.0%	3.1%	13.7%	6.4%	-5.8%	6.1%	6.6%	-0.4%
1987	9.7	5.5	13.3	9.8	9.4	9.8	6.4	3.2
1988	11.4	8.0	11.3	11.4	6.8	11.3	6.2	4.8
1989	11.5	10.0	12.3	11.5	10.0	11.5	7.7	3.6
1990	11.3	8.7	10.5	11.2	9.2	11.2	6.9	4.0
1995	9.4	7.4	8.0	9.3	7.1	9.3	6.1	3.0
2000	8.3	7.0	7.6	8.2	6.7	8.2	6.2	1.9
2005	7.7	6.6	7.2	7.7	6.6	7.7	6.0	1.5
2010	7.2	6.5	7.0	7.2	6.4	7.2	5.8	1.3

1/ Percent increase in year indicated over previous year.

2/ This column differs slightly from the last column of table A1, since table A1 includes all persons eligible for HI protection while this table excludes noninsured persons.

3/ Costs attributable to insured beneficiaries only. Benefits and administrative costs for noninsured persons are financed through general revenue transfers and premium payments, rather than through payroll taxes.

4/ Includes costs for hospice care in calendar year 1986, as provided for by the Tax Equity and Fiscal Responsibility Act of 1982.

5/ Percent increase in the ratio of program expenditures to taxable payroll. This is equivalent to the differential between the increase in program costs and the increase in taxable payroll.

NOTE: Taxable payroll is adjusted to take into account the lower contribution rates on tips and on multiple-employer "excess wages," as compared with the combined employer-employee rate.

TABLE A3.—SUMMARY OF ALTERNATIVE COST PROJECTIONS FOR THE HOSPITAL INSURANCE PROGRAM
(Percent)

Calendar year	Increases in aggregate HI inpatient hospital payments 1/				Changes in the relationship between costs and payroll 1/			Expenditures as a percent of taxable payroll
	Average hourly earnings	CPI	Other factors 2/	Total	Program costs 3/	Taxable payroll	Ratio of costs to payroll	
ALTERNATIVE I								
1986	4.7X	2.4X	2.0X	5.8X	6.1X	7.2X	-1.0X	2.58X
1987	4.8	3.2	4.9	9.2	9.5	6.2	3.1	2.66
1988	5.0	3.2	5.2	9.7	9.9	7.5	2.2	2.72
1989	5.0	2.8	4.3	8.6	8.9	6.8	1.9	2.78
1990	4.8	2.5	3.9	7.9	8.1	5.3	2.7	2.85
1995	4.2	2.0	3.0	6.5	6.6	5.7	0.8	3.03
2000	4.4	2.0	2.0	5.6	5.7	5.7	0.0	3.05
2005	4.4	2.0	1.3	4.9	5.0	5.4	-0.4	3.01
2010	4.6	2.0	0.5	4.3	4.5	5.0	-0.5	2.98
ALTERNATIVE II-A								
1986	4.7	2.9	1.8	5.8	6.1	7.0	-0.8	2.59
1987	5.1	3.9	4.7	9.5	9.8	7.0	2.6	2.66
1988	5.1	3.7	6.1	10.9	11.0	6.7	4.0	2.77
1989	5.1	3.3	5.5	10.1	10.2	6.7	3.3	2.86
1990	4.9	3.0	5.5	9.9	9.9	6.1	3.6	2.96
1995	4.9	3.0	4.2	8.6	8.5	5.6	2.7	3.45
2000	5.0	3.0	3.1	7.5	7.4	5.9	1.5	3.73
2005	5.0	3.0	2.5	6.9	6.9	5.6	1.2	3.98
2010	5.2	3.0	1.9	6.5	6.5	5.3	1.1	4.26
ALTERNATIVE II-B								
1986	4.5	3.2	1.8	5.8	6.1	6.6	-0.4	2.60
1987	5.2	4.4	4.5	9.6	9.8	6.4	3.2	2.69
1988	5.3	4.4	6.1	11.3	11.3	6.2	4.8	2.82
1989	6.4	4.9	5.2	11.3	11.5	7.7	3.6	2.92
1990	6.1	4.6	5.4	11.2	11.2	6.9	4.0	3.03
1995	5.5	4.0	4.2	9.3	9.3	6.1	3.0	3.54
2000	5.7	4.0	3.1	8.3	8.2	6.2	1.9	3.90
2005	5.7	4.0	2.5	7.7	7.7	6.0	1.5	4.21
2010	5.8	4.0	1.9	7.2	7.2	5.8	1.3	4.56
ALTERNATIVE III								
1986	4.9	4.2	1.9	6.6	6.9	6.6	0.3	2.63
1987	5.4	5.8	6.1	12.0	12.0	6.1	5.6	2.77
1988	4.4	5.1	6.9	11.9	11.9	3.8	7.8	2.99
1989	7.1	5.3	6.3	13.1	13.2	8.7	4.1	3.11
1990	4.5	5.7	6.5	11.8	11.7	4.1	7.4	3.34
1995	6.1	5.0	6.1	12.1	11.9	6.9	4.7	4.23
2000	6.4	5.0	4.5	10.6	10.5	6.4	3.8	5.11
2005	6.4	5.0	4.0	10.1	9.9	6.3	3.5	6.06
2010	6.4	5.0	3.5	9.6	9.5	6.1	3.2	7.20

1/ Percent increase in the year indicated over the previous year.

2/ Other factors include hospital hourly earnings, hospital price input intensity, unit input intensity allowance and units of service as measured by admission.

3/ Includes cost attributable to insured beneficiaries only.

NOTE: Taxable payroll is adjusted to take into account the lower contribution rates on tips and on multiple-employer "excess wages," as compared with the combined employer-employee rate.

APPENDIX B

DETERMINATION AND ANNOUNCEMENT
OF THE INPATIENT HOSPITAL DEDUCTIBLE FOR 1986*

Under the authority in section 1813(b)(2) of the Social Security Act (42 U.S.C. 1395e(b)(2)), the Secretary has determined that the Medicare inpatient hospital deductible for 1986 will be \$492.

Section 1813 provides for an inpatient hospital deductible and certain coinsurance amounts to be deducted from the amount payable by Medicare for inpatient hospital services and extended care services furnished an individual. Section 1813(b)(2) requires the Secretary of HHS to determine and publish, between July 1 and October 1 of each year, the amount of the inpatient hospital deductible applicable for the following calendar year.

The 1986 inpatient hospital deductible and coinsurance amounts discussed below have been computed in the same manner as in previous years, as required by section 1813 of the Act. The costs associated with this notice are the result of legislative requirements implemented by this notice. The Secretary has no discretion in computing the inpatient hospital deductible and coinsurance amounts. The amount of the deductible for 1986 under the formula has been determined to be \$492.

* This statement was published in the Federal Register for September 30, 1985 (Vol. 50, No. 189, p. 39940).

Because the coinsurance amounts in section 1813 are fixed percentages of the inpatient hospital deductible for services furnished in the same calendar year, the increase in the deductible has the effect of also increasing the amount of coinsurance the Medicare beneficiary must pay. Thus, for inpatient hospital services or extended care services furnished in 1985, the daily coinsurance for the 61st through 90th days of hospitalization ($1/4$ of the inpatient hospital deductible) will be \$123; the daily coinsurance for lifetime reserve days ($1/2$ of the inpatient hospital deductible) will be \$246; and the daily coinsurance for the 21st through the 100th days of extended care services in a skilled nursing facility ($1/8$ of the inpatient hospital deductible) will be \$61.50.

Under the formula in the law, the deductible for calendar year 1986 must be equal to \$45 multiplied by the ratio of (1) the current average per diem rate for inpatient hospital services for calendar year 1984 to (2) the average per diem rate for such services in 1966. The amount so determined is rounded to the nearest multiple of \$4. The average per diem rates are based on the amounts paid to participating hospitals by Medicare for inpatient services to insured individuals, plus the deductible and coinsurance amounts.

The average per diem rate for a calendar year is computed from the inpatient hospital bills for all beneficiaries. Each bill shows the number of inpatient days of care and the interim cost (the sum of interim reimbursement, deductible, and coinsurance). The data are summarized for each year, and an average interim per diem rate computed that accurately reflects interim costs on an accrual basis.

In order to reflect the change in the average per diem hospital cost under the program properly, the average interim cost must be adjusted to show the effect of final cost settlements made with each participating hospital after the end of its accounting year. The final settlements adjust the interim payment to the hospital to the actual full cost of providing covered services to beneficiaries. To the extent that the ratio of final cost to interim cost for 1984 differs from the ratio of final cost to interim cost for 1966, the increase in average interim per diem costs will not coincide with the increase in actual cost that has occurred.

The current average interim per diem rate for inpatient hospital services for calendar year 1984, based on tabulated interim costs, is \$430.50; the corresponding amount for 1966 is \$37.92. The averages are based on approximately 91 million days of hospitalization in 1984 and 30 million days in 1966 (last 6 months of the year). The ratio of final cost to interim cost is approximately 1.018 for 1984 and 1.055 for 1966. Thus, the inpatient hospital deductible is $\$45 \times (430.50 \times 1.018) / (37.92 \times 1.055) = \492.96 , which is rounded to \$492.

The inpatient hospital deductible and coinsurance amounts for the calendar year 1986 will be 23 percent higher than the 1985 amounts. The inpatient hospital deductible increased from \$400 to \$492; the daily coinsurance for the 61st through 90th days of hospitalization increased from \$100 to \$123; the daily coinsurance for lifetime reserve days increased from \$200 to \$246; and the daily coinsurance for the 21st through 100th days of extended care services in a skilled nursing facility increased from \$50.00 to \$61.50.

The 23 percent increase in the inpatient hospital deductible is due to the increase in the average per diem hospital rate for 1984 as compared to the average per diem rate for 1983. Although the increase in the average per admission hospital payment for 1984 as compared to the average per admission hospital payment for 1983 is about 11 percent, the law specifies using the average per diem rate, not the average per admission rate. The substantial difference between the average per diem increase and the average per admission increase is due to the significant reduction in average length of stay for a hospital admission. Since 1983, the average length of stay has been declining at a much faster rate than in prior years. Thus, the fixed payment per admission is spread over fewer days, causing the average per diem increase to be higher than the average per admission increase.

We believe that the large increase in the deductible will be for this year only. We expect the reduction in the length of stay to level off. Consequently, the increase in the deductible should be substantially lower in future years.

The estimated cost to beneficiaries due to these increases is \$1.1 billion. This amount is based on an estimated 8.0 million beneficiaries who will have 9.2 million benefit periods and use 4.4 million hospital coinsurance days, 1.2 million lifetime reserve days, and 4.8 million skilled nursing facility coinsurance days in 1986.

Regulatory Impact Statement

This notice merely announces amounts required by legislation. This notice is not a proposed rule or a final rule issued after a proposal, and does not alter any regulation or policy. Therefore, we have determined, and the Secretary certifies, that no analyses are required under Executive Order 12291 or the Regulatory Flexibility Act (5 U.S.C. 601 through 612).

Dated: September 20, 1985

C. McClain Haddow
Acting Administrator
Health Care Financing Administration

Approved: September 26, 1985

Margaret M. Heckler
Secretary
Department of Health and Human Services

APPENDIX C

DETERMINATION AND ANNOUNCEMENT OF
THE HOSPITAL INSURANCE MONTHLY PREMIUM RATE FOR THE UNINSURED AGED,
FOR THE 12-MONTH PERIOD BEGINNING JANUARY 1, 1986*

Under the authority in section 1818(d)(2) of the Social Security Act (42 U.S.C. 1395i2 (d)(2)), I have determined that the monthly Medicare hospital insurance premium for the uninsured aged for the 12 months beginning January 1, 1986, is \$214.

Section 1818 of the Social Security Act provides for voluntary enrollment in the hospital insurance program (Part A of Medicare), subject to payment of a monthly premium, of certain persons age 65 and older who are uninsured for social security or railroad retirement benefits and do not otherwise meet the requirements for entitlement to hospital insurance. (Persons insured under the Social Security or Railroad Retirement Acts need not pay premiums for hospital insurance.)

Section 1818(d)(2) of the Act, as amended by section 606(b) of the Social Security Amendments of 1983 (Pub. L. 98-21) requires the Secretary to determine and publish, during the next to last quarter of each calendar year, the amount of the monthly Part A premium for voluntary enrollment for the following calendar year. The formula specified in this section requires that, for the period beginning

* This statement was published in the Federal Register for September 30, 1985 (Vol. 50, No. 189, p. 39932).

January 1, 1986, the 1973 base year premium (\$33) be multiplied by the ratio of (1) the 1986 inpatient hospital deductible to (2) the 1973 inpatient hospital deductible, rounded to the nearest multiple of \$1 or, if midway between multiples of \$1, to the next higher multiple of \$1.

Under section 1813(b)(2) of the Act, the 1986 inpatient hospital deductible was determined to be \$492. (See 50 FR 39940, September 30, 1985.) The 1973 deductible was actuarially determined to be \$76, although the 1973 deductible was actually promulgated to be only \$72, to comply with a ruling of the Cost of Living Council. (See 37 FR 21452, October 11, 1972.).

The monthly premium for the 12-month period beginning January 1, 1986, has been calculated using the \$76 deductible for 1973, since this more closely satisfies the intent of the law. Thus, the monthly hospital insurance premium is $\$33 \times (492/76) = \213.63 , which is rounded to \$214.

The monthly hospital insurance premium for the uninsured aged for the 12-month period beginning January 1, 1986, will increase to \$214. That amount is 23 percent higher than the \$174 monthly premium amount for the 12-month period beginning January 1, 1985.

The estimated cost of this increase to the approximately 22 thousand enrollees who do not otherwise meet the requirements for entitlement to hospital insurance will be about 11 million.

Regulatory Impact Statement

This notice merely announces amounts required by legislation. This notice is not a proposed rule or a final rule issued after a proposal, and does not alter any regulation or policy. Therefore, we have determined, and the Secretary certifies, that no analyses are required under Executive Order 12291 or the Regulatory Flexibility Act (5 U.S.C. 601 through 612).

Dated: September 20, 1985

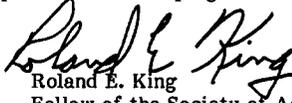
C. McClain Hadow
Acting Administrator
Health Care Financing Administration

Approved: September 26, 1985

Margaret M. Heckler
Secretary
Department of Health and Human Services

APPENDIX D
STATEMENT OF ACTUARIAL OPINION

It is my opinion that (1) the methodology used herein is based upon sound principles of actuarial practice, and (2) all the assumptions used and the resulting cost estimates are in the aggregate reasonable for the purpose of evaluating the actuarial and financial status of the Federal Hospital Insurance Trust Fund, taking into account the experience and expectations of the program.



Roland E. King
Fellow of the Society of Actuaries
Member of the American Academy of
Actuaries
Chief Actuary,
Health Care Financing Administration

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